

PATENT ABSTRACTS OF JAPAN

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(54) PRODUCTION OF COFFEE AND COFFEE

(57)Abstract:

PURPOSE: To obtain a high-quality coffee having proper bitterness, mellow flavor and fragrance immediately after extraction by extracting coffee powder with deoxidized water, warm water, hot water, boiling water or steam in order in an inert gas atmosphere.

CONSTITUTION: Coffee powder is extracted with deoxidized water, warm water, hot water, boiling water or steam in order in an inert gas atmosphere such as nitrogen. Deoxidation of water for extraction, for example, is carried out by using a commercially available deoxizing device. The whole processes from the extraction to sealing of coffee in a container are carried out in an inert gas atmosphere and dissolved oxygen in coffee is eliminated to preferably prevent deterioration of its quality caused by oxygen during preservation. Preferably coffee powder is sufficiently degassed.

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CLAIMS

[Claim(s)]

[Claim 1] The manufacturing method of the coffee of the high quality characterized by carrying out extract processing with the water which deoxidized coffee powder under the inert gas ambient atmosphere, a molten bath, hot water, a boiling water, or a steam.

[Claim 2] The manufacturing method of the high quality coffee characterized by processing a process until it carries out extract processing with the water which deoxidized coffee powder under the inert gas ambient atmosphere, a molten bath, hot water, a boiling water, or a steam and seals the obtained coffee in a container under an inert gas ambient atmosphere.

[Claim 3] The manufacturing method of the high quality coffee which carries out extract processing with the about 70-130-degree C molten bath, the hot water, or the steam which deoxidized coffee powder under the inert gas ambient atmosphere, and is characterized by processing a process until it seals in a container the coffee obtained if needed under an inert gas ambient atmosphere.

[Claim 4] High quality coffee which comes to carry out extract processing with the water which deoxidized coffee powder under the inert gas ambient atmosphere, a molten bath, hot water, a boiling water, or a steam.

[Claim 5] High quality coffee which comes to process a process until it carries out extract processing with the water which deoxidized coffee powder under the inert gas ambient atmosphere, a molten bath, hot water, a boiling water, or a steam and seals the obtained coffee in a container under an inert gas ambient atmosphere.

[Claim 6] High quality coffee which comes to process a process until it seals in a container the coffee which carried out extract processing and was obtained if needed with the about 70-130-degree C molten bath, the hot water, or the steam which deoxidized coffee powder under the inert gas ambient atmosphere under an inert gas ambient atmosphere.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention extracts coffee in the condition that there is no oxygen substantially, and obtains the coffee of high quality.

[0002] It is the coffee of the high quality holding the scent which makes the coffee extracted by this invention with mellow bitterness, hardly including harsh taste, strong bitterness, and astringency, and is built, and this invention has a so-called size the place which benefits a coffee community.

[0003]

[Description of the Prior Art] Generally, under atmospheric air, coffee carries out extract processing of the coffee powder with a 70-130-degree C molten bath, hot water, or a steam, and is manufactured.

[0004] And in order to make [many] coffee extract drained weight and to gather yield generally, extract temperature is made high and extract time amount is lengthened. However, if it does so, the taste will be degraded, i.e., disagreeable harsh taste, strong bitterness, astringency, etc. will be extracted so much, and the coffee taste and aroma are made to deteriorate.

[0005] Although performing all the processes of the extract of coffee powder, filtration, restoration, and seal under the pressurization of inert gas conventionally was proposed (JP,51-57863,A), antioxidizing which was excellent, so that it was shown in this official report was not able to be accepted.

[0006] It has been the biggest technical problem in coffee manufacture to manufacture the coffee which has a mellow taste and the aroma put in and built also by the extract by high temperature or the extract of long duration with sufficient yield generally.

[0007]

[Means for Solving the Problem] In this invention, it succeeds in obtaining the coffee of high quality by carrying out extract processing with the water which deoxidized coffee powder under the inert gas ambient atmosphere, a molten bath, hot water, a boiling water, or a steam.

[0008] Namely, in this invention, inert gas, for example, nitrogen gas, permutes the ambient atmosphere in which coffee powder exists. the extract used as the basis of the water which considers as the condition of anoxia substantially and carries out extract processing of the coffee powder, a molten bath, hot water, a boiling water, or a steam -- service water deoxidation-processing using deoxidation processing, for example, deactivator, being performed, and as water which does not contain oxygen substantially Extract processing of the coffee powder is carried out with the water which heated or heated [pressurization] and obtained this, a molten bath, hot water, a boiling water, or a steam.

[0009] In this invention, it can make it possible to extract in the condition that oxygen does not exist substantially, elution, such as the component which degrades the taste, i.e., disagreeable harsh taste, strong bitterness, and astringency, can be stopped as much as possible, and the coffee of high quality with moderate bitterness, the mellow taste, and the aroma put in and built can be obtained.

[0010] Moreover, this invention processes a process until it carries out extract processing with the water which deoxidized coffee powder under the inert gas ambient atmosphere, a molten bath, hot water, a boiling water, or a steam and seals the obtained coffee in a container under an inert gas ambient atmosphere, and obtains the coffee of high quality.

[0011] If all processes until it seals in a container from an extract are made into the bottom of an inert gas ambient atmosphere and the dissolved oxygen in coffee is lost substantially, after sealing in a container, degradation of the quality by the oxygen which happens during preservation can be prevented.

[0012] Moreover, this invention carries out extract processing with the about 70-130-degree C molten bath, the hot

water, or the steam which deoxidized coffee powder under the inert gas ambient atmosphere, processes a process until it seals in a container the coffee obtained if needed under an inert gas ambient atmosphere, and obtains high quality coffee by high yield.

[0013] In order to make [many] coffee extract drained weight and to gather yield generally, extract temperature is made high with 70-130 degrees C, and extract time amount is lengthened with 20 - 120 minutes. And if extract temperature is made high in this way and extract time amount is lengthened, the taste will be degraded, namely, disagreeable harsh taste, strong bitterness, astringency, etc. will be extracted so much.

[0014] However, according to the coffee powder extract in the condition of this invention that there is no oxygen substantially, even if it is the extract by the about 70-130-degree C molten bath, hot water, or the steam, most disagreeable tastes, such as harsh taste, strong bitterness, and astringency, are not extracted, but the coffee of high quality is obtained by high yield.

[0015] In order to make the place of an extract of coffee powder into the bottom of an inert gas ambient atmosphere in this invention, fixed sealing of the whole coffee extractor is carried out, and it is once made a vacuum, or you can make water full completely, and next can make it filled with nitrogen gas, or water can be permuted by nitrogen gas, and it can be made the bottom of the inert gas ambient atmosphere which does not have oxygen substantially.

[0016] Moreover, the water for an extract used in this invention must carry out deoxidation processing beforehand, and must use it as the water in the condition that there is no oxygen substantially. Since deoxidation processing of water uses commercial deactivator, it is enough.

[0017] Although skimming powder or impalpable powder is sufficient as coffee powder, it is good to supply what was deaerated enough to a coffee extract tub.

[0018] It adds to coffee powder as the water, the molten bath, the hot water, boiling water, or steam to 0-130 degrees C, and the water which carried out deoxidation processing performs extract processing. In the case of 0-40-degree C water, it is good to make extract time amount into about 24 hours 30 minutes or more, or to carry out a circulation extract. Moreover, in the case of a 40-70-degree C molten bath, it is good at the extract and circulation extract for about 20 - 120 minutes, and, in the case of further 70-130-degree C hot water, a boiling water, pressurization heating water, and a steam, enough in about 10 - 60 minutes.

[0019] Although the coffee extracted in the condition that there is no oxygen substantially is the coffee of high quality, if a process until it seals the obtained coffee in a container is processed under an inert gas ambient atmosphere, the coffee containing a can which does not contain oxygen substantially can be obtained.

[0020] The coffee obtained by this invention is the coffee of high quality with the scent which puts in with mellow bitterness and is built.

[0021] Next, the example of this invention is shown.

[0022]

[Example 1] Fixed sealing of the whole coffee manufacturing installation from a coffee extractor to restoration equipment was carried out, it deaerated even to the vacuum after that, and nitrogen gas was fed into this, during coffee manufacture, the pressurization condition was maintained with nitrogen gas and coffee powder was put into this extractor.

[0023] On the other hand, water was processed with deactivator, through and 110-degree C pressurization heating water were substantially made from water for this water on the temperature up plate except for oxygen, coffee powder was filled with this, and the extract was obtained. Sugar, a milk component, etc. were added and prepared to this, the container was stuffed, and coffee was manufactured. This coffee was made into the sample 2.

[0024] Without carrying out processing of water and the permutation by nitrogen gas as a conventional method of contrast, at 110 degrees C, it extracted similarly to the above-mentioned approach, and as [the] was prepared except [all] having carried out pressurization heating, and was put in the container, and coffee was manufactured. This coffee was made into the sample 1.

[0025] The panel test (30 persons) was performed using the sample 2 and the sample 1. The result is shown in the next table 1.

[0026]

[Table 1]

サンプル1：従来の方法によるサンプル
 サンプル2：本発明の方法によるサンプル

サンプル	味 覚 評 価					評価
	5	4	3	2	1	
1	0	2	7	15	6	苦み強い
2	11	12	6	1	0	まろやかで飲み易い

サンプル2については、コーヒー感がシャープに出ている。嫌なえぐ味・酸味が少ない、入れたての香りがある等の評価を得た。

[0027] Moreover, the component of a sample 2 and a sample 1 was analyzed and the component comparison was performed. The result is shown in the next table 2.

[0028]

[Table 2]

サンプル1：従来の方法によるサンプル

サンプル2：本発明の方法によるサンプル

サンプル	カフェイン	クロロゲン酸	トリゴネリン	全遊離アミノ酸
1	89.84	26.80	40.39	13.23
2	86.67	22.03	35.32	14.52

単位：mg/100ml

[0029] The coffee by this invention is understood that the scent which quality degradation is controlled, and bitterness has a soft light taste, and is put in and built is also held so that clearly from Table 1.

[0030] Moreover, phenomena, such as a moderate reduction of caffeine, a trigonelline, and organic acids and an increment in a free amino acid, were seen in component, and the coffee by this invention clarified mild feeling high quality nature so that clearly from Table 2.

[0031]

[Effect of the Invention] In this invention, extract processing of the number of coffee powder was able to be carried out in the condition that oxygen does not exist substantially, elution, such as the component which degrades the taste, i.e., disagreeable harsh taste, strong bitterness, and astringency, was able to be stopped as much as possible, and the coffee of high quality with moderate bitterness, the mellow taste, and the aroma put in and built was able to be obtained.

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(54)【発明の名称】 コーヒーの製造法及びコーヒー

(57)【要約】

【構成】 本発明は不活性ガス雰囲気下でコーヒー粉末を脱酸素した水、湯、熱水、沸騰水又は水蒸気によって抽出処理し、必要に応じて、得られたコーヒーを容器に密封するまでの工程を不活性ガス雰囲気下で処理する。

【効果】 実質的に酸素の存在しない状態でコーヒー粉末を抽出処理し、味を劣化させる成分、即ち、いやなえぐ味、強い苦味、渋味などの溶出を極力抑え、適度な苦味、まろやかな味、入れたての香りをもつ高品質のコーヒーを得ることができた。

【特許請求の範囲】

【請求項1】 不活性ガス雰囲気下でコーヒー粉末を脱酸素した水、湯、熱水、沸騰水又は水蒸気によって抽出処理することを特徴とする高品質のコーヒーの製造法。

【請求項2】 不活性ガス雰囲気下でコーヒー粉末を脱酸素した水、湯、熱水、沸騰水又は水蒸気によって抽出処理し、得られたコーヒーを容器に密封するまでの工程を不活性ガス雰囲気下で処理することを特徴とする高品質コーヒーの製造法。

【請求項3】 不活性ガス雰囲気下でコーヒー粉末を脱酸素した約70～130℃の湯、熱水又は水蒸気によって抽出処理し、必要に応じて得られたコーヒーを容器に密封するまでの工程を不活性ガス雰囲気下で処理することを特徴とする高品質コーヒーの製造法。

【請求項4】 不活性ガス雰囲気下でコーヒー粉末を脱酸素した水、湯、熱水、沸騰水又は水蒸気によって抽出処理してなる高品質コーヒー。

【請求項5】 不活性ガス雰囲気下でコーヒー粉末を脱酸素した水、湯、熱水、沸騰水又は水蒸気によって抽出処理し、得られたコーヒーを容器に密封するまでの工程を不活性ガス雰囲気下で処理してなる高品質コーヒー。

【請求項6】 不活性ガス雰囲気下でコーヒー粉末を脱酸素した約70～130℃の湯、熱水又は水蒸気によって抽出処理し、必要に応じて得られたコーヒーを容器に密封するまでの工程を不活性ガス雰囲気下で処理してなる高品質コーヒー。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は実質的に酸素のない状態でコーヒーを抽出し、高品質のコーヒーを得るものである。

【0002】 本発明によって抽出されたコーヒーはえぐ味、強い苦味、渋味をほとんど含まず、まろやかな苦味と入れたての香りを保持した高品質のコーヒーであって、本発明はコーヒー界に益するところ大なるものがある。

【0003】

【従来の技術及び課題】 一般に、コーヒーは大気下でコーヒー粉末を70～130℃の湯、熱水又は水蒸気で抽出処理して製造されている。

【0004】 そして、一般に、コーヒーの抽出固形量を多くして収率を上げるために、抽出温度を高くし、抽出時間を長くしている。しかし、そうすれば、味を劣化させる、即ち、いやなえぐ味、強い苦味、渋味などが多量に抽出されてしまって、コーヒーの味や香りを劣化させていくことになる。

【0005】 従来、コーヒー粉末の抽出、濾過、充填、密封の全工程を不活性ガスの加圧下で行うことが提案（特開昭51-57863号公報）されたが、同公報に示されるほどすぐれた酸化防止を認めることはできなか

った。

【0006】 一般に、高温度による抽出や長時間の抽出によってもまろやかな味及び入れたての香りをもつコーヒーを収率よく製造するのがコーヒー製造における最大の課題となっているのである。

【0007】

【課題を解決するための手段】 本発明では不活性ガス雰囲気下でコーヒー粉末を脱酸素した水、湯、熱水、沸騰水又は水蒸気によって抽出処理することによって高品質のコーヒーを得ることに成功したものである。

【0008】 即ち、本発明では、コーヒー粉末の存在する雰囲気を不活性ガス、例えば窒素ガスで置換し、実質的に無酸素の状態とし、かつ、コーヒー粉末を抽出処理する水、湯、熱水、沸騰水又は水蒸気のもととなる抽出用水を脱酸素処理、例えば脱酸素装置を用いた脱酸素処理を行い、実質的に酸素を含まない水として、これを加熱又は加圧加熱して得た水、湯、熱水、沸騰水又は水蒸気によって、コーヒー粉末を抽出処理するものである。

【0009】 本発明においては、実質的に酸素の存在しない状態で抽出することを可能とし、味を劣化させる成分、即ち、いやなえぐ味、強い苦味、渋味などの溶出を極力抑え、適度な苦味、まろやかな味、入れたての香りをもつ高品質のコーヒーを得ることができたものである。

【0010】 また、本発明は不活性ガス雰囲気下でコーヒー粉末を脱酸素した水、湯、熱水、沸騰水又は水蒸気によって抽出処理し、得られたコーヒーを容器に密封するまでの工程を不活性ガス雰囲気下で処理して高品質のコーヒーを得るものである。

【0011】 抽出から容器に密封するまでの全工程を不活性ガス雰囲気下にして実質的にコーヒー中の溶存酸素をなくしておけば容器に密封した後保存中に起る酸素による品質の劣化を防止することができる。

【0012】 また、本発明は不活性ガス雰囲気下でコーヒー粉末を脱酸素した約70～130℃の湯、熱水又は水蒸気によって抽出処理し、必要に応じて得られたコーヒーを容器に密封するまでの工程を不活性ガス雰囲気下で処理して高収率で高品質コーヒーを得るものである。

【0013】 一般に、コーヒーの抽出固形量を多くして収率を上げるために、抽出温度を70～130℃と高くし、抽出時間を20～120分と長くしている。そして、このように抽出温度を高くし、抽出時間を長くすれば、味を劣化させる、即ち、いやなえぐ味、強い苦味、渋味などが多量に抽出されてしまうことになる。

【0014】 しかし、本発明の実質的に酸素のない状態のコーヒー粉末抽出によれば、約70～130℃の湯、熱水又は水蒸気による抽出であっても、えぐ味、強い苦味、渋味などのいやな味は、ほとんど抽出されず、高品質のコーヒーが高収率で得られるのである。

【0015】 本発明においてコーヒー粉末の抽出の場を

不活性ガス雰囲気下にするには、コーヒー抽出装置全体を一定密閉し、一旦真空にするか、完全に水を充満させ、次に窒素ガスで充満させるか、水を窒素ガスと置換し、実質的に酸素のない不活性ガス雰囲気下にすることができる。

【0016】また、本発明において使用する抽出用の水は、あらかじめ脱酸素処理をして、実質的に酸素のない状態の水にしなければならない。水の脱酸素処理は市販の脱酸素装置を使用するので十分である。

【0017】コーヒー粉末は荒引き粉末でも、微粉末でもよいが、十分脱氣したものをコーヒー抽出槽に投入するのがよい。

【0018】脱酸素処理した水は、0～130°Cまでの水、湯、熱水、沸騰水又は水蒸気としてコーヒー粉末に添加して抽出処理を行う。0～40°Cの水の場合は抽出時間を30分以上24時間程度としたり、循環抽出したりすると良い。また、40～70°Cの湯の場合は20～120分程度の抽出や循環抽出で良く、更に70～130°Cの熱水、沸騰水、加圧加熱水、水蒸気の場合は10～60分程度で十分である。

【0019】実質的に酸素のない状態で抽出したコーヒーは高品質のコーヒーであるが、得られたコーヒーを容器に密封するまでの工程を不活性ガス雰囲気下で処理すれば、実質的に酸素を含まないカン入りコーヒーを得ることができる。

サンプル1：従来の方法によるサンプル

サンプル2：本発明の方法によるサンプル

味 覚 評 価

サンプル	5	4	3	2	1	
1	0	2	7	15	6	苦み強い
2	11	12	6	1	0	まろやかで飲み易い

サンプル2については、コーヒー感がシャープに出ている。嫌なえぐ味・酸味が少ない、入れたての香りがある等の評価を得た。

【0027】また、サンプル2とサンプル1の成分を分析して成分比較を行った。その結果は次の表2に示される。

サンプル1：従来の方法によるサンプル

サンプル2：本発明の方法によるサンプル

【0028】

【表2】

サンプル	カフェイン	クロロゲン酸	トリゴネリン	全遊離アミノ酸
1	89.84	26.80	40.39	13.23
2	86.67	22.03	35.32	14.52

単位：mg/100ml

【0029】表1から明らかなように、本発明によるコ

ーヒーは品質劣化が抑制され、苦味はやわらかく軽い味

があり、入れたての香りも保持されているのが分る。

【0030】また、表2から明らかなように、本発明によるコーヒーは、成分的にカフェイン、トリゴネリン、有機酸類の適度な減少、及び遊離アミノ酸の増加等の現象が見られ、マイルド感高品質性を明らかにした。

【0031】

【発明の効果】本発明においては、実質的に酸素の存在しない状態でコーヒー粉数を抽出処理し、味を劣化させる成分、即ち、いやなえぐ味、強い苦味、渋味などの溶出を極力抑え、適度な苦味、まろやかな味、入れたての香りをもつ高品質のコーヒーを得ることができた。